

Date: Wednesday, 1/11/2006 4:29:12 PM
 User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: BRACKET ASSEMBLY
Job Number	: 25467		
Estimate Number	: 11887		
P.O. Number	: N/A	Part Number	: D3137045
This Issue	: 1/11/2006 S.O. No.: N/A	Drawing Number	: D3137 REV E
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: N/A Type : MACHINED PARTS	Drawing Revision	: E
Previous Run	: N/A	Material	: N/A
Written By	: SEE COMMENT BELOW	Due Date	: 2/10/2006 Qty: 4 Um: Each
Checked & Approved By	: SEE ABOVE DATE & USER		
Comment	: Est Rev:A : 04.02.18 New issue KJ/DS		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	M174B0500X02000	17-4 SS Bar
-----	-----------------	-------------



Comment: Qty.: 0.3849 f(s)/Unit Total : 1.5397 f(s)
 Material: 17-4 SS Bar per AMS 5604/5643
 (M17-4-B0.500x02.000)
 Batch: m19572

En 06/02/01

2.0	BAND SAW	BAND SAW
-----	----------	----------



Comment: BAND SAW
 Cut blanks: (.500" x 2.000") 4.400" long

En 06/02/01 x4

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
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Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3137-9 as per Folio FA621 and Dwg D3137 Identify as D3137-9

2-Deburr

3-Scribe batch number

JL/SA 06.02.21

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

JL/SA 06.02.21

5.0	QC8	SECOND CHECK
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Comment: SECOND CHECK

JL/SA 06/02/23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ Date: 06/02/21
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
06.02.20	3	1 part scrapped - error in pgm 1 tool was programmed - a50 to low - 1 part hole offset on tool .035		- program fixed - part replace - Scrub & destroy	J.L. S.D. 06.02.21			
06.02.21	3	Qty (3) parts, hole offset on one side, per attached email	CP 06.02.21 per 081042	PARTS OK PER ATTACHED EMAIL.	J.L. 06.02.21		CP 06.02.21 per 081042	

NOTE: Date & initial all entries

Date: Wednesday, 1/11/2006 4:29:12 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET ASSEMBLY

Job Number: 25467

Part Number: D3137045

Job Number:



Seq. #: Machine Or Operation: Description :

6.0 D31373 Guide



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D3137-3 GUIDE 325012 x4

En 06/02/24 4

7.0 D31375 Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D3137-5 Washer 324547 x4

En 06/02/24 4

8.0 MS24694S101 Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 MS24694-s101 Screw M16941 x2

311735 x2

En 06/02/24 4

9.0 SMALL FAB 1 SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1
Assemble D3137-045 as per Dwg D3137

En 06/02/24 4

10.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

MS 06/02/24 4

11.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 57409

06/02/24 (4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 1/11/2006 4:29:13 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET ASSEMBLY

Job Number: 25467

Part Number: D3137045

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL
Inspection Level 21

④
S 06/02/07

Job Completion



U 06.02.27

12.2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

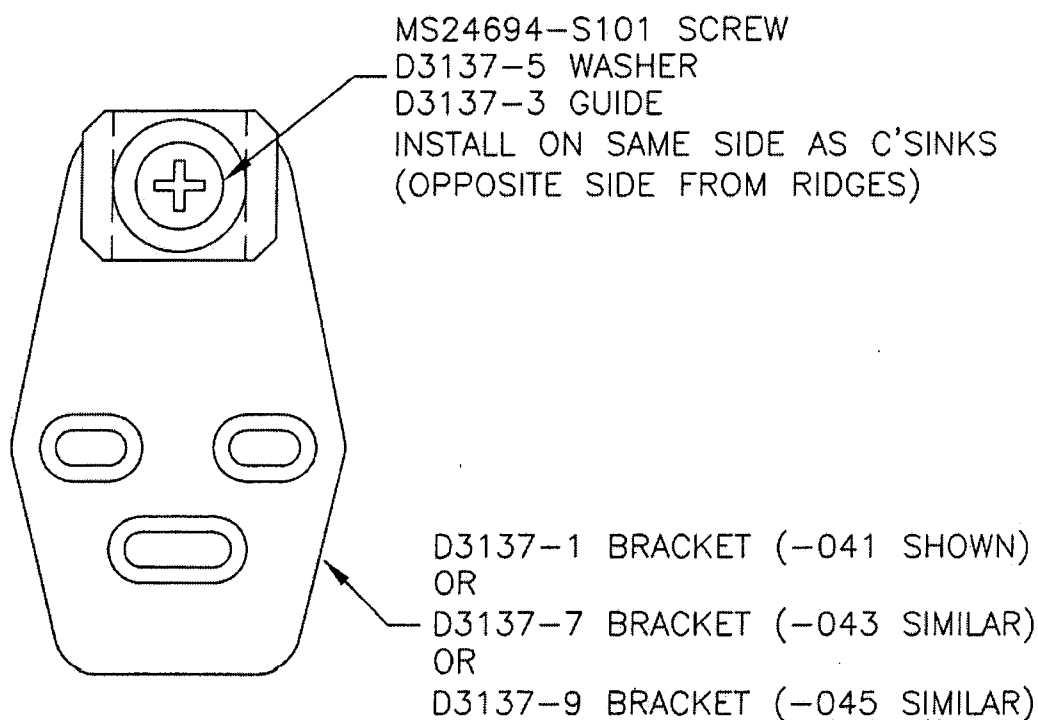
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN DS	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3137	REV. E SHEET 1 OF 5
DATE 05.11.23		TITLE BRACKET ASSEMBLY	SCALE 1:1
A	02.04.17	NEW ISSUE	
B	03.01.16	ADD RIDGES; ADD MAT'L PROP.	
C	03.08.15	ADD -043	
D	04.11.03	RE-DESIGN D3137-5; CHANGE DIMS	
E	05.11.23	ADD -045	

RELEASED
05.12.09

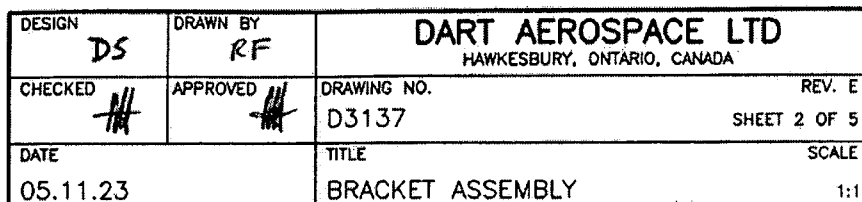


D3137-041 BRACKET ASSEMBLY (SHOWN)
D3137-043 BRACKET ASSEMBLY (SIMILAR)
D3137-045 BRACKET ASSEMBLY (SIMILAR)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 25467

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- 1) REPLACES PREMIER P/N B30-23000-105/-106 BRACKETS
- 2) MATERIAL: 17-4PH STAINLESS STEEL
PER AMS 5604 OR 5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
- 3) FINISH: NONE
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 7) ENGRAVE DART LOGO USING 0.20 & P/N USING 0.15 LETTERS TO MAX. DEPTH 0.010
WITH A LOGO MIN TOOL RAD OF 0.093 & P/N MIN TOOL RAD 0.04 AS SHOWN
- 8) IDENTIFY WITH DART B/N USING FINE POINT PERMANET INK MARKER

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SYMBOLS

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CONFIDENTIAL

U.S. REFERENCE

ARIZONA

609

2

RE 5

W/CHR. OR

271

NO. 25416

100

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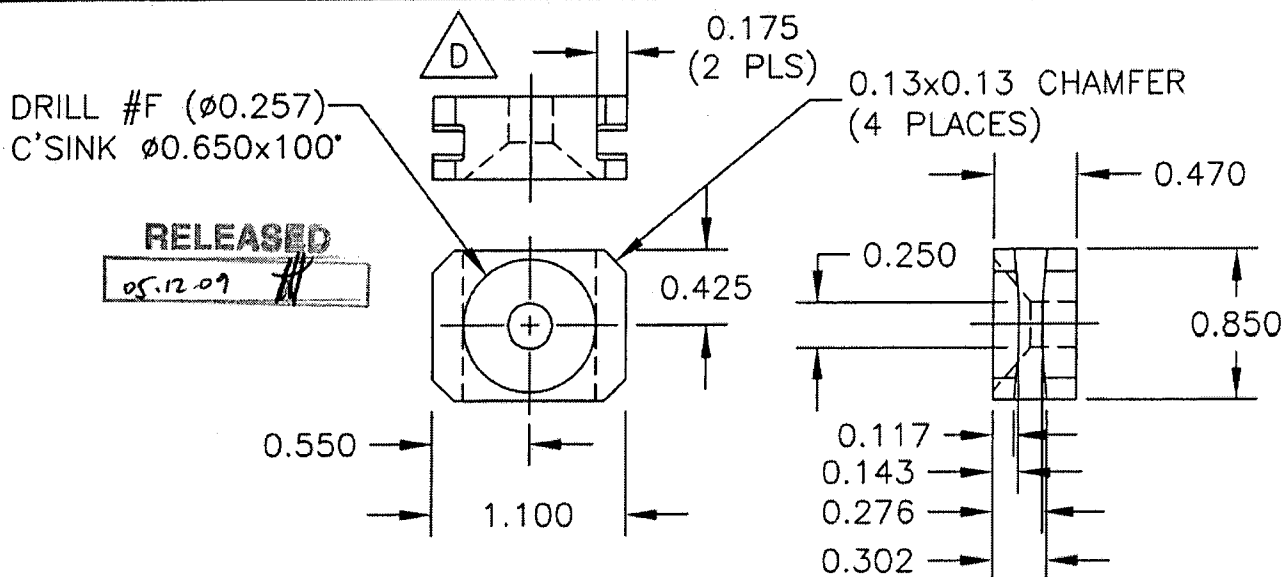
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1

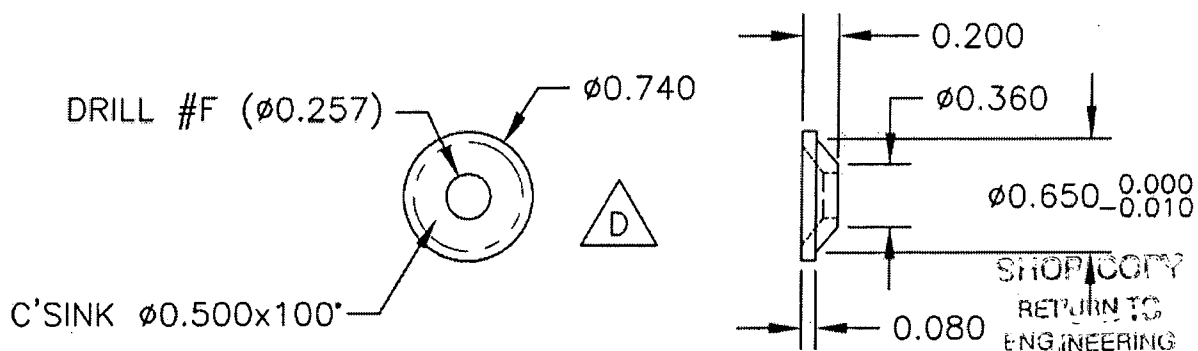
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DART

DESIGN DS	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3137	REV. E SHEET 3 OF 5
DATE 05.11.23	TITLE BRACKET ASSEMBLY		SCALE 1:1

**D3137-3 GUIDE**



- 1) REPLACES PREMIER P/N B30-23000-207
- 2) MATERIAL: DELRIN BAR (REF DART SPEC. M-DELRIN-B)
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL EDGES 0.005 TO 0.015

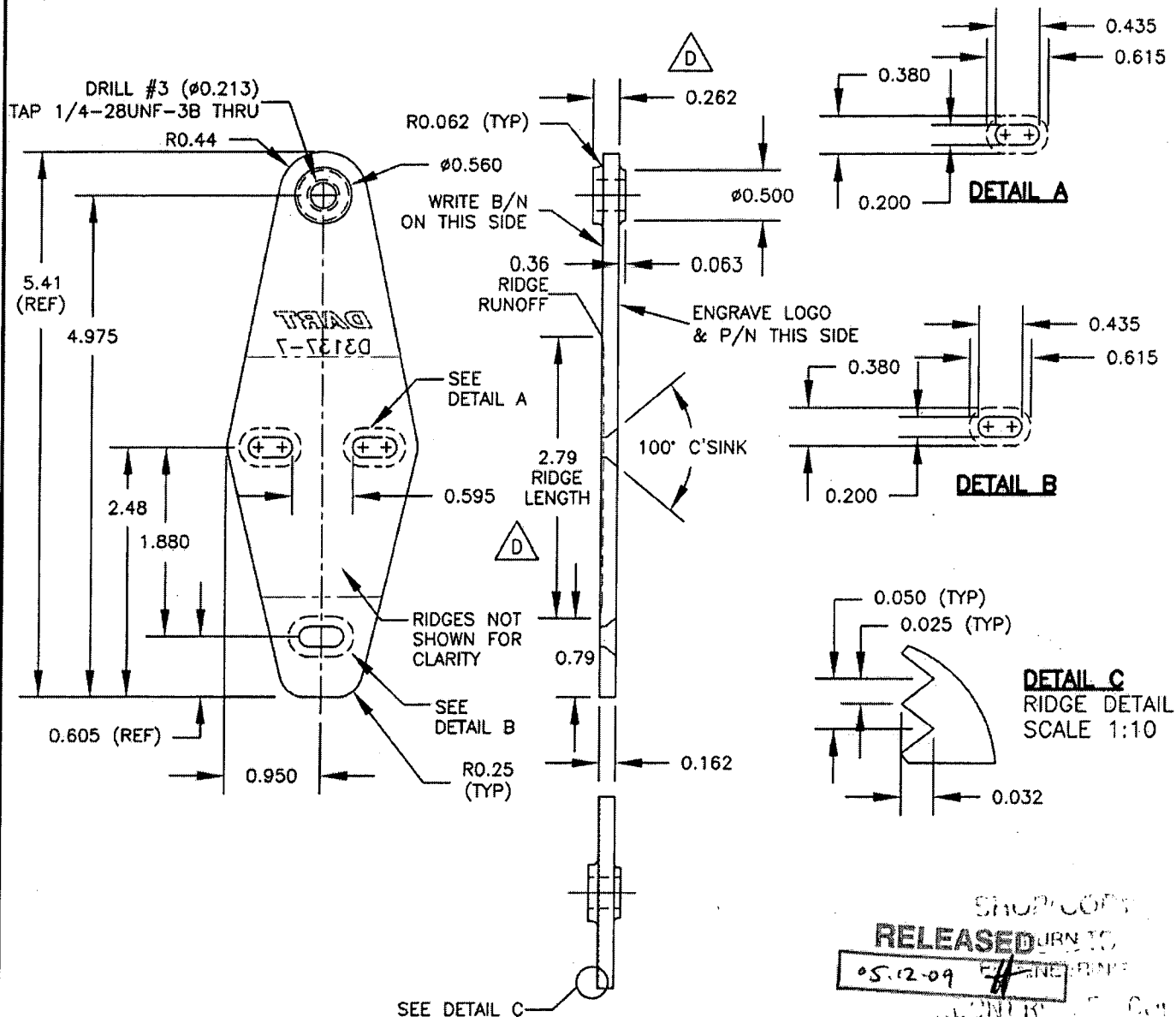
**D3137-5 WASHER**

- 1) REPLACES PREMIER P/N B30-23000-209
- 2) MATERIAL: 6061-T6 (QQ-A-225/8 OR QQ-A-200/8) BAR (REF DART SPEC. M6061T6R)
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL EDGES 0.005 TO 0.015

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DESIGN DS	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D3137	REV. E SHEET 4 OF 5
DATE 05.11.23		TITLE BRACKET ASSEMBLY	SCALE 2:3



D3137-7 BRACKET:

- 1) MATERIAL: 17-4PH STAINLESS STEEL PER AMS 5604 OR 5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART LOGO USING 0.20 & P/N USING 0.15 LETTERS TO MAX. DEPTH 0.010
WITH A LOGO MIN TOOL RAD OF 0.093 & P/N MIN TOOL RAD 0.04 AS SHOWN
- 7) IDENTIFY WITH DART B/N USING FINE POINT PERMANENT INK MARKER

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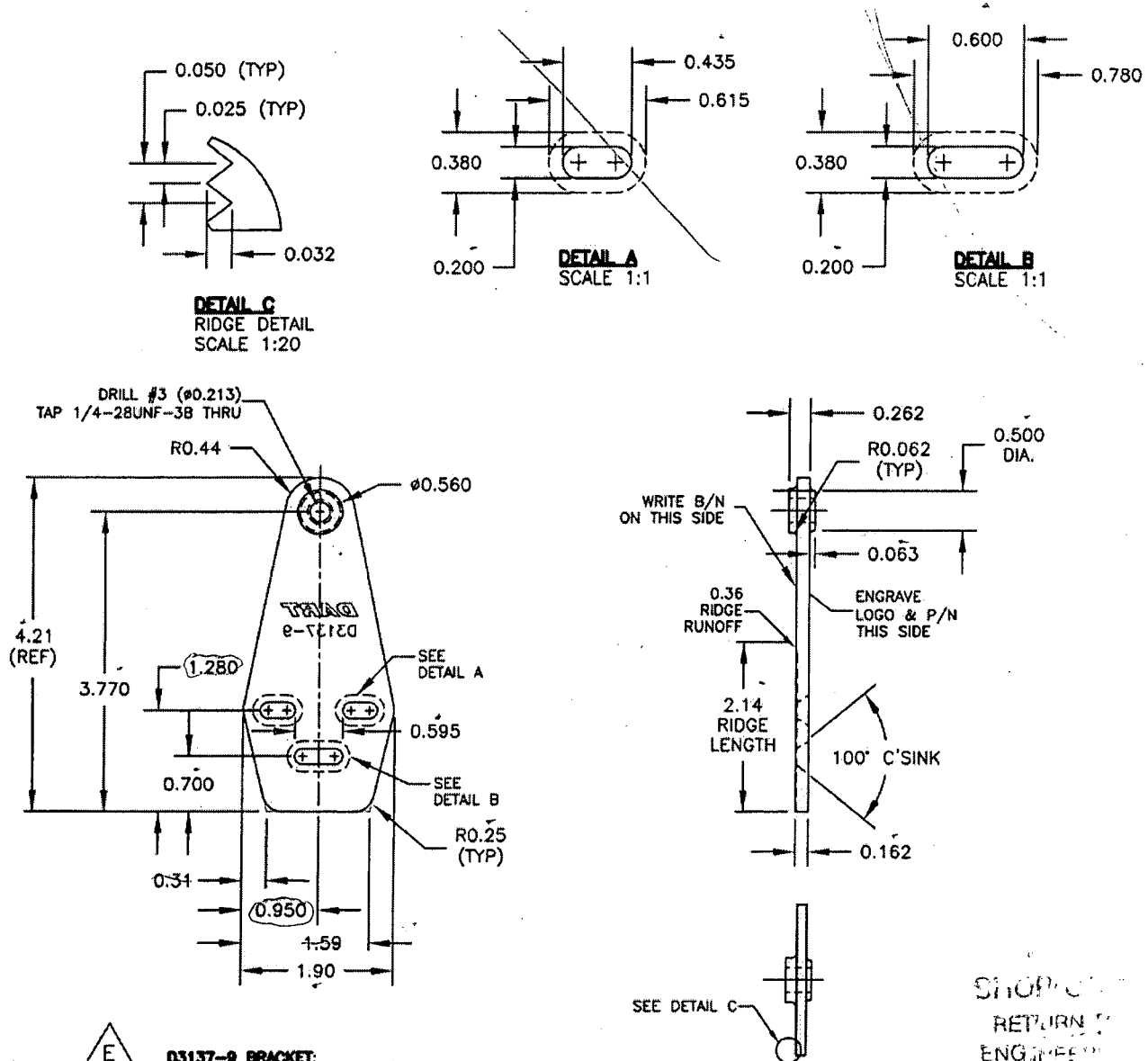
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WORK ORDER

NO 25467

DART

DESIGN DS	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3137	REV. E SHEET 5 OF 5
DATE 05.11.23	TITLE BRACKET ASSEMBLY		SCALE 1:2

**E****D3137-2 BRACKET:**

- 1) REPLACES PREMIER P/N B30-23000-105/-106 BRACKETS
- 2) MATERIAL: 17-4PH STAINLESS STEEL
PER AMS 5604 OR 5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
- 3) FINISH: NONE
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 7) ENGRAVE DART LOGO USING 0.20 & P/N USING 0.15 LETTERS TO MAX. DEPTH 0.010
WITH A LOGO MIN TOOL RAD OF 0.093 & P/N MIN TOOL RAD 0.04 AS SHOWN
- 8) IDENTIFY WITH DART B/N USING FINE POINT PERMANENT INK MARKER

SHOP
RETURN
ENGINEER

RELEASED

05.12.09
[Signature]

WITH YOU

WORK OF

NO 28467

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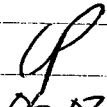
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DART AEROSPACE LTD		Work Order: 25467
Description: bracket assembly		Part Number: D3137-9
Inspection Dwg: D3137	Rev: E	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☒ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
.600	+ .010	.597	✓			
.200	"	.198	✓			
.380	"	.389	✓			
.780	"	.782	✓			
.435	"	.431	✓			
.200	"	.199	✓			
.615	"	.622	✓			
Ø .500	+ .005 - 0	.502	✓			
.063	+ .010	.065	✓			
1.90	+ .030	1.892	✓			
4.21	"	4.211	✓			
3.770	+ .010	3.771	✓			
.595	"	.598	✓			
1.280	"	1.280	✓			
.700	"	.701	✓			
.950	"	.951	✓			
1.25	+ .030	1.250	✓			
.162	+ .010	.162	✓			
.032	"	.031	✓			
2.79 2.14	+ .030	2.140	✓			
.262	+ .010	.263	✓			
1.062	+ .010	1.062	✓			
Ø .560	+ .005 - 0	.561	✓			

Measured by: J.L	Audited by: MB	Prototype Approval: 
Date: 06.02.20	Date: 06/02/20	Date: 06.02.20

Rev A	Date	Change New Issue	Revised by KJ/RF	Approved
-------	------	------------------	------------------	----------

Chris Provencal

From: David Shepherd [davids@dartaero.com]
Sent: February 21, 2006 3:44 PM
To: Chris Provencal
Subject: Re: D3137-9 NCR

Per our discussion earlier, these parts are acceptable.

David

----- Original Message -----

From: "Chris Provencal" <cprovencal@dartaero.com>
To: <davids@dartaero.com>
Sent: Tuesday, February 21, 2006 1:27 PM
Subject: D3137-9 NCR

>
> D3137-9, qty(3) have the tapped hole off-center on one side. Basically,
> the
> parts look OK from the "logo side", but on the ridged side the raised
> circle
> is off-center by as much as 0.03" and the tapped hole is visibly
> uncentered
> on that raised circle. This would be hid after assembly.
>
> Sincerely,
> Chris Provencal
> DART Aerospace Ltd.
> Email..cprovencal@dartaero.com
> Phone...613-632-3336
> Fax.....613-632-4443
>
>